

Amendments to the Claims:

Claims 1, 2, 4-7, 10-12, 15, 16 and 18-25 are pending in this application. Claims 1 and 5 are independent. No new matter has been added by this Amendment.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (PREVIOUSLY PRESENTED): An optical modulation element capable of forming a reflective diffraction grating in which heights of a plurality of elements each having a reflecting surface periodically change,

wherein the reflecting surface of at least one of the plurality of elements is supported in a length direction by a piezoelectric element when driven in a direction of height by the piezoelectric element,

wherein the plurality of elements are respectively provided with the piezoelectric element where the polarities of electric fields of which are alternately different from each other.

2 (ORIGINAL): An element according to claim 1, wherein the plurality of elements each having the reflecting surface are two-dimensionally arrayed by juxtaposing long sides.

3 (CANCELLED):

4 (PREVIOUSLY PRESENTED): An element according to claim 1, wherein a rear surface side of an effective reflecting portion of each of the elements is fixed to the piezoelectric element.

5 (PREVIOUSLY PRESENTED): An optical modulation element capable of forming a reflective diffraction grating in which heights of a plurality of elements each having a reflecting

surface periodically change,

wherein the reflecting surface of at least one of the plurality of elements is supported in a length direction by a piezoelectric element when driven in a direction of height by the piezoelectric element,

wherein a deformation amount of a projecting or recessed shape of each element is changed by adjusting a voltage to be impressed to the piezoelectric element, thereby controlling an intensity of reflected light.

6 (ORIGINAL): An element according to claim 1, wherein when the reflecting surfaces of the plurality of elements are substantially flush with each other, said reflecting surfaces act as a flat mirror as a whole.

7 (ORIGINAL): An element according to claim 1, wherein each of the elements is a strip-shaped element having a width of about 5 μ m.

8-9 (CANCELLED):

10 (PREVIOUSLY PRESENTED): A projection apparatus including an optical modulation element for modulating incident light in accordance with a video signal, wherein the optical modulation element is formed from said optical modulation element of claim 1.

11 (PREVIOUSLY PRESENTED): An element according to claim 1, wherein pixels each formed from the plurality of elements are arranged in a two-dimensional array.

12 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein pixels each formed from the plurality of elements are arranged in a two-dimensional array.

13-14 (CANCELLED):

15 (PREVIOUSLY PRESENTED): A projection apparatus including an optical modulation element for modulating incident light in accordance with a video signal, wherein the optical modulation element is formed from said optical modulation element of claim 1.

16 (PREVIOUSLY PRESENTED): A projection apparatus including an optical modulation element for modulating incident light in accordance with a video signal, wherein the optical modulation element is formed from said optical modulation element of claim 5.

17 (CANCELLED):

18 (CURRENTLY AMENDED): A projection apparatus including an optical modulation element for modulating incident light in accordance with a video signal, wherein the optical modulation element is formed from said optical modulation element of claim ~~9~~ 1.

19 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein the plurality of elements each having the reflecting surface are two-dimensionally arrayed by juxtaposing long sides.

20 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein a rear surface side of an effective reflecting portion of each of the elements is fixed to the piezoelectric element.

21 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein when the reflecting surfaces of the plurality of elements are substantially flush with each other, said reflecting surfaces act as a flat mirror as a whole.

22 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein each of the elements is a strip-shaped element having a width of about 5 μ m.

23 (PREVIOUSLY PRESENTED): A projection apparatus including an optical modulation element for modulating incident light in accordance with a video signal, wherein the optical modulation element is formed from said optical modulation element of claim 5.

24 (PREVIOUSLY PRESENTED): An element according to claim 5, wherein said plurality of elements are respectively provided with the piezoelectric element where the polarities of electric fields of which are alternately different from each other.

25 (PREVIOUSLY PRESENTED): An element according to claim 1, wherein a deformation amount of a projecting or recessed shape of each element is changed by adjusting a voltage to be impressed to the piezoelectric element, thereby controlling an intensity of reflected light.

26 (NEW): A light modulation element comprising:

a plurality of reflecting surfaces; and

means for controlling heights of the reflecting surfaces by using a plurality of piezoelectric elements,

wherein said means for controlling forms a diffractive grating in which the heights of the reflecting surfaces change periodically and forms a mirror in which the heights of the reflecting surfaces are substantially constant, and

said means for controlling forms the diffractive grating by applying voltages to adjacent piezoelectric elements so that a polarity of electric field of the plurality of the piezoelectric elements may be varied between the adjacent piezoelectric elements.

27 (NEW): The light modulation element according to claim 26, wherein a plurality of said light modulation elements each having the reflecting surfaces are two dimensionally arrayed by juxtaposing long sides.

28 (NEW): The light modulation element according to claim 26, wherein a plurality of said light modulation elements are respectively provided with the plurality of piezoelectric elements, and wherein the polarities of electric fields of the plurality of piezoelectric elements are alternately different from each other.

29 (NEW): The light modulation element according to claim 28, wherein a rear surface side of an effective reflecting portion of each of the plurality of said light modulation elements is fixed to the piezoelectric elements.

30 (NEW): The light modulation element according to claim 26, wherein a deformation amount of a projecting or recessed shape of each element is changed by adjusting a voltage to be impressed to the piezoelectric element, thereby controlling an intensity of reflected light.

31 (NEW): The light modulation element according to claim 26, wherein when the reflecting surfaces are substantially flush with each other, the reflecting surfaces act as a flat mirror as a whole.

32 (NEW): The light modulation element according to claim 26, wherein each of a plurality of said light modulation element is a strip-shaped element having a width of about 5 μ m.

33 (NEW): The light modulation element according to claim 26, wherein an interval between the adjacent piezoelectric elements is minimized as much as possible.

34 (NEW): The light modulation element according to any one of claims 26 to 33, wherein pixels each formed from the plurality of said light modulation element are arranged in a two-dimensional array.

35 (NEW): A projection apparatus comprising:
a light modulation element according to any one of claims 26 to 33; and
a projection optical system for projecting an image together with the light modulation element.